

REMARKS

Claims 1, 3-8, 10-12, and 13-14 are pending in this application. Claims 3, 6, and 7 have been withdrawn. New claims 13-14 have been added to the application. Claims 1 and 10 are amended herein. No new matter has been added by way of this amendment. Applicants respectfully request reconsideration of the above-identified application, in view of the above amendments and the following remarks.

Claim Rejections - 35 U.S.C. § 112

1. Claims 1, 4, 5 and 8 were rejected under 35 U.S.C. 112, first paragraph as containing subject matter which allegedly was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action indicates that, "There is no suggestion in the disclosure with regard to Figure 2 that the evaporator 22 and condenser 32 are downstream of coolant heater 12."

Applicants assert that this rejection is now moot. The language requiring that the second heat exchanger is "downstream" of the first heat exchanger has been deleted. Applicants also have amended independent claim 1 to recite, *inter alia*, "wherein the second heat exchanger is disposed in a separate channel from the first heat exchanger and the third heat exchanger." Applicants respectfully submit that the amended claim 1 is clearly supported by the specification, for example on page 10, lines 1-6, as well as elected FIG. 2. Accordingly, Applicants request withdrawal of this ground of rejection.

2. Claim 12 was rejected under 35 U.S.C § 112, first paragraph, as allegedly containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action asserts, "In regard to elected Figure 2 (as shown) there is only one three-way valve 35 shown."

Applicants respectfully traverse the rejection. Although Figure 2 in the application as originally filed, illustrated a single three-way valve 35, the originally filed Specification the paragraph on page 10, lines 7-28 discusses "the embodiment represented in Fig. 2." Moreover, lines 14-16 explicitly recite, "In order to switch between heating and cooling modes, for example, two three-way valves 35 are simply operated for application to the second fluid circuit 20 or the third fluid circuit 30."

The April 15, 2002 Office Action also indicated that in addition to Figs. 6a-6e and 7, "There appear to be some missing numerals in Figures 1-5.... Correction is required." Applicants submit that in accordance with both the Examiner's suggestion and the originally filed Specification, a corrected FIG. 2 was included with the proposed drawing amendments filed on July 15, 2002. Fig. 2 was amended in accordance with the specification to include a second three-way valve 35. Therefore, Applicants respectfully submit that claim 12 satisfies 35 U.S.C. § 112, first paragraph. Applicants request reconsideration and withdrawal of this ground of rejection.

3. The Office Action indicated, "Claim 1, in particular, recites extremely little structure and a host of functional recitations." Applicants respectfully submit that the amended

independent claim 1 recites, inter alia, "said first heat exchanger is configured and disposed to warm an air flow by transferring heat from the engine...." Amended independent claim 1 continues, "wherein the fluid circuits are disposed so that the air flow is directed across...." As amended, independent claim 1 positively recites the elements of the apparatus, how the elements are configured, and how the elements interrelate relate with each other. Claim 10 also positively recites the elements of a heating and air conditioning installation, and details how the elements of the apparatus are configured and relate to one another. Accordingly, Applicants submit that each of the informalities raised in the Office Action have herein been addressed.

Claim Rejections - 35 U.S.C. § 102, 103

1. Claims 1, 4, 5, and 8 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Japanese Patent 02-041917 ("JP '917"). Also, claims 1, 4, 5, and 8 were rejected, as being unpatentable over the combined teaching of JP '917 and Enomoto (US Patent No. 5,291,941), Figure 8. Claims 10 and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Enomoto, Figure 8. Also, claims 10 and 11 are rejected under 35 U.S.C. § 103(a), as being unpatentable over Enomoto (Fig. 8) as applied to claims 10 and 11 above, and further in view of Volk et al. (US Patent No. 3,421,339). Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art as applied to claims 10 and 11 above, and further in view of Halls (US Patent No. 3,213,637) or Ellenberger (US Patent No. 2,776,543) or Wheeler (US Patent No. 2,769,314).

Applicants respectfully submit that these rejections are moot and should be withdrawn for at least the reasons discussed below. In particular, none of the cited references teaches discloses or suggests "the second heat exchanger is disposed in a separate channel from the first heat exchanger and the third heat exchanger" as recited in Applicants' claim 1.

A. The Japanese '917 Patent Shows A Heater, And Two Heat Exchangers In A Single Duct

The Japanese '917 patent clearly shows that the hot water heater 41, first heat exchanger 51, and second heat exchanger 52 are arranged in the same ventilating duct 2. Moreover, the Abstract of JP '917 patent explicitly teaches arranging all of the heat exchangers in a single ventilating duct. Specifically, JP '917 teaches, "[in] this constitution, the heat exchanger[s] is [are] arranged in the ventilating duct, thereby the leakage of water being prevented even when an opening is bored in the heat exchanger." (See, Abstract, JP '917). Accordingly, JP '917 actually teaches away from disposing the heat exchangers so that the second heat exchanger is disposed in a separate channel from the first heat exchanger and the third heat exchanger, as recited in amended claim 1.

B. Enomoto Teaches That Its Cooling Heat Exchanger Is In The Same Duct As Its Heater Core

Figure 8 of the Enomoto patent illustrates heat exchanger 36 for cooling, heat exchanger 37 for heating, and condenser 11. Applicants submit that if the fluid circuits of the

embodiment illustrated in Figure 8 were shown in accordance with the full system illustrated in Figure 1, heat exchangers 11 and 36 would line up with heater core 301. Accordingly, the heat exchanger 36 for cooling and heater core 301 would be shown in the same air duct 26, whereas the heat exchanger 37 for heating would be isolated on the other side of the compressor 10. Enomoto simply does not teach or suggest disposing the heat exchangers so that the second heat exchanger (configured to cool the air flow) is disposed in a separate duct from the first heat exchanger and the third heat exchanger, as recited in amended claim 1.

C. The Embodiment Disclosed In Volk Is Limited To A Single Duct

The Volk patent illustrates cooling cycle condenser 4 in the same air channel as engine radiator 28. In a separate air flow channel directed to conditioned space 12, Volk illustrates cooling cycle evaporator 11 and heating cycle condenser 18. Both of the air channels in Volk consist of a cooling heat exchanger and a warming heat exchanger. The Volk patent simply does not teach disposing the heat exchangers so that the second heat exchanger configured to cool an air flow is disposed in a separate duct from the first heat exchanger configured and disposed to warm an air flow by transferring heat from a vehicle engine and the third heat exchanger configured and disposed to warm the air flow, as recited in amended claim 1.

D. Halls, Ellendberger, Or Wheeler Do Not Teach, Disclose Or Suggest “The Second Heat Exchanger Is Disposed In A Separate Channel From The First Heat Exchanger And The Third Heat Exchanger” As Recited In Applicants’ Claim 1

Furthermore, Applicants submit that none of the Halls, Ellenberger, or Wheeler patents remedy the deficiency. Indeed, each of these references was cited in the Office Action for allegedly teaching features recited in dependent claim 12. Wheeler and Ellenberger are merely a refrigerating apparatus and an air conditioning apparatus system respectively that have only one duct. Halls is directed to a valve system for circulating cooling fluid among the heat exchangers and does not discuss the placement of the heat exchangers in various ducts. Accordingly, none of these references teaches, discloses or suggests “the second heater exchanger is disposed in a separate channel from the first heat exchanger and the third heat exchanger” as recited in Applicants’ claim 1.

Applicants respectfully submit that amended independent claim 1 is patentably distinct from the cited references. Similarly, Applicants submit that the claims 4, 5, 8 and 13, which are directly or indirectly dependent on amended independent claim 1, are also patentably distinct from the cited references. Also, Applicants’ claim 10 (“wherein the cooling heat exchanger is disposed in a separate channel than the heat exchanger and the auxiliary heat exchanger”) and its dependent claims 11, 12, and 14 are patentably distinct for similar reasons. Therefore, Applicants respectfully request withdrawal of these grounds of rejection.

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CONCLUSION

It is now believed that all pending claims are in condition for allowance. In view of the amendment and remarks, an early and favorable reconsideration is respectfully requested.

Respectfully submitted,

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